

REMARKS

Favorable reconsideration of the above-identified application is requested in view of the amendments made herein and the following remarks.

Claims 17-20 are newly added. Thus, Claims 1-20 are pending, with Claims 1, 6, 7 and 12 being independent.

Claim 6 is allowable.

Claims 1-5 and 7-16 are rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 5,581,613 to Nagashima et al., hereinafter *Nagashima*.

Page 10, line 15 of the present application describes an embodiment of the present invention, where the transfer of data along a bus is dependent on a scan enable signal and a print enable signal. The scan enable signal allows data to travel from a copy machine to a computer, and the print enable signal allows data to travel from the computer to the copier. The scan enable signal and print enable signal are based on a clock signal, as shown in Fig. 2. As the phases are offset by half, *i.e.*, 180 degrees, one or the other is active at any time. The scan image data and the print image data are alternately transferred on a pixel by pixel basis through the bus, based on the cycle of the clock signal. The purpose is to allow a single bus to alternately transfer data from a print machine to a host computer and from a host computer to the print machine, thereby achieving substantially "simultaneous" transfer.

Claim 1 broadly encompasses that subject matter and is directed to a digital image copying machine. An image reader reads an image of an original document and generates image data. A printing unit prints based on image data. A bus

transmits the image data generated by the image reader to an external computer and transmits image data from the external computer to the printing unit. A signal generator generates a signal based on an operation timing of the printing unit. A switching means, in response to the signal, switches the bus between transmission from the image reader to the external computer and transmission from the external computer to the printing unit.

In contrast to the present application, which uses an operation timing of a printing unit to **alternate** directions of data transfer through a single bus, *Nagashima* is primarily concerned with encryption of image data based on a timing clock.

In *Nagashima* an image data signal and an encryption signal are sent in the same direction, e.g., from the color copying apparatus 5 to the external controller 4. To perform the encryption/decryption, the signals must be timed with respect to one another. Figure 1 in *Nagashima* relates to the first embodiment and shows the color copying apparatus 5 and an external controller 4 that are electronically connected to one another by two lines. An image information signal 1 and an encryption information signal 2 are transmitted between the two devices. Color image information 1 is **encrypted** and sent from the color copying apparatus 5 to the external controller 4, and an encryption information signal 2 is also sent from the color copying apparatus 5 to the external controller 4. The encrypted color image signal 1 is then decrypted in accordance with the encryption information signal 2 by an encryption circuit 21 in the external controller 4. When processing of the decrypted color image data is complete, the color image data is again encrypted and output from the external controller 4 to the printer unit 13 of the color copying apparatus 5, along with an encryption information signal 2. The encrypted image

information signal 2 is decrypted by an encrypting circuit 11 and an image processing circuit 10 in the color copying apparatus.

Column 4, lines 22-32, of *Nagashima* discloses how the image signal and encryption signal are timed with respect to one another. The image clock is a clock signal serving as a reference for other signals. The sync signal is used as both a sync signal for use between lines of raster image signals and a sync signal for switching the contents of the encryption information signal 2 into a pattern (1) at the leading edge (A) and the pattern (2) at the leading edge (B). Each pattern represents the encryption signal and contains a number indicating the type of encryption, numerical information concerning the synchronization, and the like. The image clock and image sync signals have nothing to do with switching the direction of transmission along the bus terminal.

Figure 4 of *Nagashima* (identified in the Office action) discloses a second embodiment where the image data and the encryption data are sent along one line instead of two lines. The image data transfer across the single transfer line is bidirectional in that the image data is sent from the color copying apparatus 5 to the external processor 4, and back. Column 6, lines 50-52 state that: "The overall operation of this embodiment is the same as that of the first embodiment described above with reference to FIG. 3..." That is, where there are two lines in the first embodiment, in the second embodiment only one line is used. Column 6, lines 17-23 states that: "information such as a number indicating the type of encryption and numerical information associated with synchronization and output during an effective period (period of level HIGH) or the sync signal, and an image information signal is output during an ineffective period (period of level LOW) of the sync signal, thereby

performing decryption. In this manner, the image information signal and the encryption information signal can be transmitted together through a single signal line." The timing clock allows the image data and the encryption signals to travel on the same line in the same direction and does not relate to the switching of directions of transfer that is associated with the claimed switching of the bus in Claim 1.

Claim 1 is allowable at least because *Nagashima* does not disclose the claimed subject matter relating to a signal generator that generates a signal based on an operation timing of a printing unit, and a switching means that, in response to the signal, ***switches the bus*** between transmissions from the image reader to the external computer and transmission from the external computer to the printing unit. Rather, as noted above, the image clock and sync signal are used to transmit the encryption data and the image data in the same direction on a single line, and a switching means does not switch transmissions of the bus in response to the image clock signal or the sync signal.

Applicants note that the Examiner essentially repeated verbatim the rejection set forth in the Office action mailed on May 4, 2005. The only portion of the rejection that was modified was the part that formerly read: "a signal generator (image clock, col. 3, line 33) that generates a signal based on an operating timing (image sync signal, col. 3, line 33) of the printing unit (printing unit 13, Fig. 1)...", and now reads (with annotations showing changes): "a signal generator (image clock, col. 3, line 33) that generates a signal based on an operating timing (this is inherently done since an image sync signal would be in synchronization with the printer when the data is intended for printing) ~~(image sync signal, col. 3, line 33)~~ of the printing unit (printing unit 13, Fig. 1)..."

The Examiner's new rejection does not overcome the points made in the earlier response because it has not been pointed out where or how *Nagashima* discloses at least the subject matter relating to ***switching the bus*** based on the operation timing of the printing unit.

For at least the reasons stated above with regard to the deficiencies of *Nagashima*, in both this response and the response filed on February 1, 2006, Claim 1 is allowable.

Claims 7 and 12 are allowable for similar reasons as those set forth above with regard to Claim 1.

Claims 2-5, 8-11 and 13-16 are allowable at least by virtue of their dependence from allowable independent claims, and also because they additionally define over the cited document. For example, Claims 2 and 8 recite that the signal generated by the signal generator is a clock signal issued based on an operation timing for each pixel. The Official Action points to *Nagashima*'s disclosure in column 3, lines 33-35 of the clock signal, and asserts that the clock signal is "issued based on an operation timing for each pixel." However, that portion of *Nagashima* in its entirety recites:

Note that image clocks, image sync signals, communication lines for performing condition control of the apparatus, and the like are omitted from Fig. 1.

That portion of *Nagashima* does not state that the clock signal is based on operation timing for each pixel. Additionally, a word search was performed in *Nagashima* and the word "pixel" only appears in column 13, line 64 and is unrelated to the above-noted subject matter. Should this rejection be maintained, it is

requested that it be shown where or how *Nagashima* discloses or suggests a clock signal based on operation timing for each pixel.

Similarly, Claims 3 and 9 recite that the signal generated by the signal generator is a horizontal synchronization signal issued based on an operation timing for each line. The Official Action again points to *Nagashima*'s disclosure in column 3, lines 33-35 of the clock signal, and asserts that the clock signal is "issued based on an operation timing for each line" and directs attention to Figures 2 and 5. However, that portion of *Nagashima* and the portions referring to Figures 2 and 5, do not refer to issuing a clock signal based on an operation timing for each line. Therefore, should the rejections be maintained, it is requested that it be shown where or how *Nagashima* refers to a line, as recited in the claims, and that it be shown where or how *Nagashima* discloses or suggests issuing a clock signal based on an operation timing for each line.

Claim 14 recites that a synchronization signal is issued on an operation timing for each line. For reasons along the lines of those set forth with regard to Claims 3 and 9, Claim 14 is not disclosed or suggested by *Nagashima*.

New Claims 17-20 generally recite that the bus is switched, and switched back again repeatedly and at predetermined fixed intervals. *Nagashima* does not disclose that subject matter.

For at least the above-reasons, it is requested that all the rejections be withdrawn and that this application be allowed in a timely manner.

Should any questions arise in connection with this application, or should the Examiner feel that a teleconference would be helpful in resolving any remaining issues pertaining to this application, the undersigned requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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